

Madison County Mines Site Conrad Tailings OU4 Fredericktown, Missouri



Mining History

- Madison County is located in the Old Lead Belt in SE Missouri and is one of the first counties in the U.S. to be mined for lead in early 1700's.
- 10 to 15 million cubic yards of mine waste was generated until mining activities ceased.
- OU4 Conrad Tailings is one of 13 known mine waste piles in Madison County.

OU4 History at the Site

- Site studies across the county were initiated by the state in 1980. First Superfund study conducted in 1995. Site listed in NPL in 2003.
- OU4 Tailings determined to be unstable and eroding to the intermittent creek, Mill Creek, and the Little St. Francis River.
- 283,000 cubic yard of tailings were estimated present during the initial studies and approximately 28 acres are effected.

OU4 History at the Site (cont'd)

- The tailings impoundment was selected as the repository for the residential lead soils clean up initiated in 2008 due to its central, geographic location with respect to impacted residences.
- An additional 200,000 cubic yards of soil and chat has been transported to the repository since 2009 compelling EPA to complete remediation and stabilization through the use of engineering components and property use controls.

OU4 Conrad Tailings Setting

Note residence located adjacent to tailings in SE corner



Human Health and Ecological Risk Assessments and Results

- Toxic lead and cadmium concentrations exist in the mine waste resulting in an impact to soil, sediment, and surface water and groundwater at the tailings impoundment and downstream locations.
- Adverse health effects include impaired neurological and natural growth in children, and bio-accumulation in terrestrial and aquatic species which are passed through the food chain.
- Four residences are located immediately down gradient and downstream of the tailings pile.
- Downstream locations are frequented for recreational activities and additional residences and public areas exist along these water courses which are subject to ongoing impact during flood events.

Selected Remedy

- Remove eroded tailings, impacted soil, and sediment at downstream locations including residential properties.
- Construction of semi-permeability cap and establish vegetative cover over tailings impoundment.
- Construction of basins to capture surface runoff and groundwater seeps for treatment.
- Utilize existing in addition to establish new wetlands for treatment and controlling runoff.

Selected Remedy (cont'd)

- Establish environmental covenants with property owners as institutional controls to prevent activities that could result in damage to constructed engineering components and prevent exposure risk.
- O&M will be provided by State of Missouri Department of Natural Resources thru State Superfund Contract

Exemption 5: DPP

Additional Considerations

- EPA selected the OU4 Conrad tailings site as a contaminated soils repository due to its strategic, geographic location which has reduced overall remedial cost by limiting transportation distances in executing the residential soil cleanup actions.
- A private property owner was willing to allow such use by EPA with the understanding the property would be remediated thereafter in a timely, good faith fashion.
- Remediation at this location will fortify public trust and community acceptance which has been compromised over the years by the inconvenience of the residential soil actions which has disrupted their own and neighbouring properties through excavation, truck traffic, noise, and damaged roads.